CLAIMS

We claim:

1. A composition comprising:

a recombinant or synthetic antigen or a fragment thereof derived from hookworm, and,

a pharmacologically acceptable carrier.

2. The composition of claim 1 wherein said recombinant or synthetic antigen displays at least about 80% identity to an antigen selected from the group consisting of Na-ASP-1, Na-ACE, Na-CTL, Na-APR-1, NA-APR-2, Ac-TMP, Ac-MEP-1, Ac-MTP-1, Ac-ASP-1, Ac-ASP-2, Ac-ASP-3, Ac-ASP-4, Ac-ASP-5, Ac-ASP-6, Ac-TTR-1, Ac-103, Ac-VWF, Ac-CTL, Ac-API, Ac-MTP-1, Ac-MTP-2, Ac-MTP-3, Ac-FAR-1, Ac-KPI-1, Ac-APR-1, Ac-APR-2, Ac-AP, Ay-ASP-1, Ay-ASP-2, Ay-MTP-1, Ay-API, and Ay-TTR.

3. The composition of claim 2 wherein said antigen is Ac-TMP.

4. The composition of claim 2 wherein said antigen is Ac-MEP-1.

5. The composition of claim 2 wherein said antigen is Ac-MTP-1.

6. The composition of claim 1 wherein a species of said hookworm is selected from the group consisting of *Necator americanus*, *Ancylostoma caninum*, *Ancylostoma ceylanicum*, and *Ancylostoma duodenale*.

7. A method of eliciting an immune response to hookworm in a mammal, comprising the step of,

administering to said mammal an effective amount of a composition comprising

a recombinant or synthetic antigen or a fragment thereof derived from hookworm, and

a pharmacologically acceptable carrier.

8. The method of claim 7 wherein said recombinant or synthetic antigen displays at least about 80% identity to an antigen selected from the group consisting of Na-ASP-1, Na-ACE, Na-CTL, Na-APR-1, NA-APR-2, Ac-TMP, Ac-MEP-1, Ac-MTP-1, Ac-ASP-1, Ac-ASP-2, Ac-ASP-3, Ac-ASP-4, Ac-ASP-5, Ac-ASP-6, Ac-TTR-1, Ac-103, Ac-VWF, Ac-CTL, Ac-API, Ac-MTP-1, Ac-MTP-2, Ac-MTP-3, Ac-FAR-1, Ac-KPI-1, Ac-APR-1, Ac-APR-2, Ac-AP, Ay-ASP-1, Ay-ASP-2, Ay-MTP-1, Ay-API, and Ay-TTR.

9. The method of claim 8 wherein said antigen is Ac-TMP.

10. The method of claim 8 wherein said antigen is Ac-MEP-1.

11. The method of claim 8 wherein said antigen is Ac-MTP-1.

12. The method of claim 7 wherein a species of said hookworm is selected from the group consisting of *Necator americanus*, *Ancylostoma caninum*, *Ancylostoma ceylanicum*, and *Ancylostoma duodenale*.

13. A method of vaccinating a mammal against hookworm, comprising the step of,

administering to said mammal an effective amount of a composition comprising a recombinant or synthetic antigen or fragment thereof derived from hookworm, and a pharmacologically acceptable carrier.

14. The method of claim 13 wherein said recombinant or synthetic antigen displays at least about 80% identity with an antigen selected from the group consisting of Na-ASP-1, Na-ACE, Na-CTL, Na-APR-1, NA-APR-2, Ac-TMP, Ac-MEP-1, Ac-MTP-1, Ac-ASP-1, Ac-ASP-2, Ac-ASP-3, Ac-ASP-4, Ac-ASP-5, Ac-ASP-6, Ac-TTR-1, Ac-103, Ac-VWF, Ac-CTL, Ac-API, Ac-MTP-1, Ac-MTP-2, Ac-MTP-3, Ac-FAR-1, Ac-KPI-1, Ac-APR-1, Ac-APR-2, Ac-AP, Ay-ASP-1, Ay-ASP-2, Ay-MTP-1, Ay-API, and Ay-TTR.

15. The method of claim 14 wherein said antigen is Ac-TMP.

16. The method of claim 14 wherein said antigen is Ac-MEP-1.

17. The method of claim 14 wherein said antigen is Ac-MTP-1.

18. The method of claim 13 wherein a species of said hookworm is selected from the group consisting of *Necator americanus*, *Ancylostoma caninum*, *Ancylostoma ceylanicum*, and *Ancylostoma duodenale*.

19. A composition comprising:

a recombinant or synthetic antigen or fragment thereof derived from hookworm, wherein said recombinant or synthetic antigen displays at least about 80% identity with an antigen selected from the group consisting of Na-ASP-1, Na-ACE, Na-CTL, Na-APR-1, NA-APR-2, Ac-TMP, Ac-MEP-1, Ac-MTP-1, Ac-ASP-1, Ac-ASP-2, Ac-ASP-3, Ac-ASP-4, Ac-ASP-5, Ac-ASP-6, Ac-TTR-1, Ac-103, Ac-VWF, Ac-CTL, Ac-API, Ac-MTP-1, Ac-MTP-2, Ac-MTP-3, Ac-FAR-1, Ac-KPI-1, Ac-APR-1, Ac-APR-2, Ac-AP, Ay-ASP-1, Ay-ASP-2, Ay-MTP-1, Ay-API, and Ay-TTR, and,

a pharmacologically acceptable carrier.

20. The method of claim 19 wherein said antigen is Ac-TMP.

21. The method of claim 19 wherein said antigen is Ac-MEP-1.

22. The method of claim 19 wherein said antigen is Ac-MTP-1.

23. The method of claim 19 wherein a species of said hookworm is selected from the group consisting of *Necator americanus*, *Ancylostoma caninum*, *Ancylostoma ceylanicum*, and *Ancylostoma duodenale*.

24. A vaccine comprising:

a recombinant or synthetic antigen or fragment thereof derived from hookworm, wherein said recombinant or synthetic antigen displays at least about 80% identity with an

antigen selected from the group consisting of Na-ASP-1, Na-ACE, Na-CTL, Na-APR-1, NA-APR-2, Ac-TMP, Ac-MEP-1, Ac-MTP-1, Ac-ASP-1, Ac-ASP-2, Ac-ASP-3, Ac-ASP-4, Ac-ASP-5, Ac-ASP-6, Ac-TTR-1, Ac-103, Ac-VWF, Ac-CTL, Ac-API, Ac-MTP-1, Ac-MTP-2, Ac-MTP-3, Ac-FAR-1, Ac-KPI-1, Ac-APR-1, Ac-APR-2, Ac-AP, Ay-ASP-1, Ay-ASP-2, Ay-MTP-1, Ay-API, and Ay-TTR, and,

a pharmacologically acceptable carrier.

25. The method of claim 24 wherein said antigen is Ac-TMP.

26. The method of claim 24 wherein said antigen is Ac-MEP-1.

27. The method of claim 24 wherein said antigen is Ac-MTP-1.

28. The method of claim 24 wherein a species of said hookworm is selected from the group consisting of *Necator americanus*, *Ancylostoma caninum*, *Ancylostoma ceylanicum*, and *Ancylostoma duodenale*.

29. A composition for eliciting an immune response, comprising:

a recombinant or synthetic antigen or fragment thereof derived from hookworm, wherein said recombinant or synthetic antigen displays at least about 80% identity with an antigen selected from the group consisting of Na-ASP-1, Na-ACE, Na-CTL, Na-APR-1, NA-APR-2, Ac-TMP, Ac-MEP-1, Ac-MTP-1, Ac-ASP-1, Ac-ASP-2, Ac-ASP-3, Ac-ASP-4, Ac-ASP-5, Ac-ASP-6, Ac-TTR-1, Ac-103, Ac-VWF, Ac-CTL, Ac-API, Ac-MTP-1, Ac-MTP-2, Ac-MTP-3, Ac-FAR-1, Ac-KPI-1, Ac-APR-1, Ac-APR-2, Ac-AP, Ay-ASP-1, Ay-ASP-2, Ay-MTP-1, Ay-API, and Ay-TTR, and,

a pharmacologically acceptable carrier.

30. The method of claim 29 wherein said antigenic protein, polypeptide, or fragment thereof is Ac-TMP.

31. The method of claim 29 wherein said antigenic protein, polypeptide, or fragment thereof is Ac-MEP-1.

32. The method of claim 29 wherein said antigenic protein, polypeptide, or fragment thereof is Ac-MTP-1.

33. The method of claim 29 wherein a species of said hookworm is selected from the group consisting of *Necator americanus*, *Ancylostoma caninum*, *Ancylostoma ceylanicum*, and *Ancylostoma duodenale*.

34. A method for enabling vaccination of a patient against infectious diseases, comprising the steps of:

a) treating hookworm infection to a degree sufficient to increase lymphocyte proliferation; and

b) vaccinating said patient against said infectious disease.

35. The method of claim 34 wherein said infectious disease is selected from the group consisting of HIV, tuberculosis, malaria, measles, tetanus, diphtheria, pertussis, and polio.

36. A method for enabling hookworm vaccination, comprising the steps of:

a) chemically treating a hookworm infected patient to ameliorate hookworm infection; and

b) vaccinating said patient with a recombinant or synthetic antigen or fragment thereof derived from hookworm after amelioration of hookworm infection.

37. The method of claim 36 wherein said recombinant or synthetic antigen displays at least about 80% identity with an antigen is selected from the group consisting of Na-ASP-1, Na-ACE, Na-CTL, Na-APR-1, NA-APR-2, Ac-TMP, Ac-MEP-1, Ac-MTP-1, Ac-ASP-1, Ac-ASP-2, Ac-ASP-3, Ac-ASP-4, Ac-ASP-5, Ac-ASP-6, Ac-TTR-1, Ac-103, Ac-VWF, Ac-CTL, Ac-API, Ac-MTP-1, Ac-MTP-2, Ac-MTP-3, Ac-FAR-1, Ac-KPI-1, Ac-APR-1, Ac-APR-2, Ac-AP, Ay-ASP-1, Ay-ASP-2, Ay-MTP-1, Ay-API, and Ay-TTR.

38. A method of reducing blood loss in a patient infected with hookworm, comprising the step of

administering to said patient a composition comprising

a recombinant or synthetic antigen or fragment thereof derived from hookworm, and,

a pharmacologically acceptable carrier.

39. A method of reducing hookworm size in a patient infected with hookworm, comprising the step of

administering to said patient a composition comprising

a recombinant or synthetic antigen or fragment thereof derived from hookworm, and,

a pharmacologically acceptable carrier.

40. A method of reducing hookworm burden in a patient infected with hookworm, comprising the step of

administering to said patient a composition comprising

a recombinant or synthetic antigen or fragment thereof derived from hookworm, and,

a pharmacologically acceptable carrier.

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1 95. An Ac-APR-2 antigen.

1 96. An Ay-TTR antigen derived from a nematode.

1 97. The Ay-TTR antigen of claim 96, wherein said nematode is a hookworm.